original claims, but was not rejected in the first Office Action, making the rejection in the October 28, 2008 Office Action "final" is premature.

In these circumstances, applicants request withdrawal of the finality of the rejection.

Rejection Under 35 U.S.C. §112, First Paragraph

Claims 15-35 now stand rejected under 35 U.S.C. §112, first paragraph, as being based on an insufficient disclosure relative to the recitations of the igniting means and the prevention of plasma. In the rejection, a plasma is defined as "a highly ionized gas containing an approximately equal number of positive ions and electrons." The Ward patent is cited as allegedly disclosing that bombarding an air/fuel mixture with microwave pulses creates ions in the cylinder chamber inherently producing a combustible plasma mixture or plasma flame (see column 3, lines 35-50). Additionally, it is contended that the claim language states that the air-fuel mixture has already been ignited by the microwave pulses and that such ignition is at odds with preventing formation of a plasma, and that without a highly ionized fuel-air mixture "it is nebulous how the plasma mixture is prevented."

For the same reasons that the presently pending claims are patentable over the Ward patent, the Ward patent does not show that the present invention is insufficiently disclosed. The plasma is prevented until the time the fuel is ignited by the use of microwave pulses, as opposed to the continuous supply of microwave energy, and by controlling the power, pulse duration and timing of the microwave energy. The specifics of the control are recited in the dependent claims. For example, claim 24 recites injection of microwave radiation "up to an ignition temperature by gradual delivery of energy." The portion of the Ward patent referred to in the Office Action relates to particular microwave energy radiating continuously to produce standing waves creating

a plasma that is subsequently ignited by another mechanism (spark plug). In view of these differences between the Ward patent and the present invention, the disclosure of this application is enabling such that the prevention of the formation prior to ignition of the fuel of a plasma is not at odds with the ignition of the fuel/air mixture due to the microwave pulses.

The rejection appears to be based on the contention that the ignition will inherently create a plasma. However, nothing in the Ward patent necessarily requires that ignition of an air/fuel mixture, even when pre-conditioned or ignited by microwave energy, requires the formation of a plasma unless the radiation is of a certain nature, such as that disclosed in the Ward patent.

In the claimed invention, at least one microwave pulse is injected into the combustion space with fuel, which injection levels the temperature increase of that fuel up to the ignition temperature, particularly by the gradual delivery of energy. In other words, the temperature of the fuel is increased by the microwave pulse without the formation of a plasma. When the ignition temperature is reached, the fuel is ignited uniformly over a large space in the combustion chamber.

Accordingly, the specification and claims comply with 35 U.S.C. §112

In view of the foregoing, claims 15-35 are allowable. Prompt and favorable action is solicited.

Respectfully submitted,

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